

WHAT IS CLAIMED IS:

1. A refrigerant cycle apparatus in which a multistage compression type compressor constitutes a refrigerant circuit, including an electromotive element, 5 and first and second compression elements driven by the electromotive element in an airtight container to suck a refrigerant gas having an intermediate pressure, which has been compressed by the first compression element, into the second compression element and to compress and discharge 10 the refrigerant gas, the apparatus comprising:

a sensor for detecting a discharge refrigerant pressure of the first compression element; and a control device into which an output of the sensor is input,

wherein the control device detects reverse of the 15 discharge refrigerant pressures of the first and second compression elements based on the discharge refrigerant pressure of the first compression element.

2. The refrigerant cycle apparatus according to 20 claim 1, wherein the control device judges that the discharge refrigerant pressures of the first and second compression elements are reversed in a case where the discharge refrigerant pressure of the first compression element rises to a predetermined value.

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3. A refrigerant cycle apparatus in which a multistage compression type compressor constitutes a

refrigerant circuit, including an electromotive element, and first and second compression elements driven by the electromotive element in an airtight container to suck a refrigerant gas having an intermediate pressure, which has
5 been compressed by the first compression element, into the second compression element and to compress and discharge the refrigerant gas, the apparatus comprising:

10 a temperature sensor for detecting a discharge refrigerant temperature of the first compression element; and a control device into which an output of the temperature sensor is input,

15 wherein the control device detects reverse of the discharge refrigerant pressures of the first and second compression elements based on the discharge refrigerant temperature of the first compression element.

4. The refrigerant cycle apparatus according to claim 3, wherein the control device judges that the discharge refrigerant pressures of the first and second compression elements are reversed in a case where the discharge refrigerant temperature of the first compression element rises to a predetermined value.

25 5. A refrigerant cycle apparatus in which a multistage compression type compressor constitutes a refrigerant circuit, including an electromotive element, and first and second compression elements driven by the

electromotive element in an airtight container to suck a refrigerant gas having an intermediate pressure, which has been compressed by the first compression element, into the second compression element and to compress and discharge the refrigerant gas, the apparatus comprising:

5 a first sensor for detecting a discharge refrigerant pressure of the first compression element; a second sensor for detecting a discharge refrigerant pressure of the second compression element; and a control 10 device into which outputs of both the sensors are input,

wherein the control device detects reverse of the discharge refrigerant pressures of the first and second compression elements based on the discharge refrigerant pressures of the first and second compression elements.

15 6. A refrigerant cycle apparatus in which a multistage compression type compressor constitutes a refrigerant circuit, including an electromotive element, and first and second compression elements driven by the 20 electromotive element in an airtight container to suck a refrigerant gas having an intermediate pressure, which has been compressed by the first compression element, into the second compression element and to compress and discharge the refrigerant gas, the apparatus comprising:

25 a first temperature sensor for detecting a discharge refrigerant temperature of the first compression element; a second temperature sensor for detecting a

discharge refrigerant temperature of the second compression element; and a control device into which outputs of both the temperature sensors are input,

5 wherein the control device detects reverse of the discharge refrigerant pressures of the first and second compression elements based on the discharge refrigerant temperatures of the first and second compression elements.

7. The refrigerant cycle apparatus according to
10 claim 6, wherein the control device judges that the discharge refrigerant pressures of the first and second compression elements are reversed in a case where the discharge refrigerant temperature of the first compression element is higher than that of the second compression
15 element.

8. The refrigerant cycle apparatus according to
claim 1, 2, 3, 4, 5, 6, or 7, wherein the control device reduces a valve opening of an expansion valve constituting
20 the refrigerant circuit in a case where it is judged that the discharge refrigerant pressures of the first and second compression elements are reversed.

9. The refrigerant cycle apparatus according to
25 claim 1, 2, 3, 4, 5, 6, 7, or 8, wherein the control device lowers the number of revolutions of the electromotive element in a case where it is judged that the discharge

refrigerant pressures of the first and second compression elements are reversed.

10. The refrigerant cycle apparatus according to
5 claim 1, 2, 3, 4, 5, 6, 7, 8, or 9, wherein carbon dioxide is used as a refrigerant sealed in the refrigerant circuit.